



amclt F

SEQUENCE LISTING

<110> Palese, Peter  
Garcia-Sastre, Adolfo

<120> RECOMBINANT NEGATIVE STRAND RNA VIRUS  
EXPRESSION SYSTEMS AND VACCINES

<130> 7682-048

<140> 09/396,539

<141> 1999-09-14

<150> 09/106,377

<151> 1998-06-29

<150> 08/252,508

<151> 1994-06-01

<160> 63

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer for rescue of the mutant NA gene into virus particles

<400> 1

tacgaggaaa tggtcctgtt a

21

<210> 2

<211> 19

<212> PRT

<213> Influenza virus

<400> 2

Gln Leu Val Trp Met Ala Cys Asn Ser Ala Ala Phe Glu Asp Leu Arg

1

5

10

15

Val Leu Ser

<210> 3

<211> 16

<212> PRT

<213> Influenza virus

<220>

<223> epitope within the NP protein

<400> 3

Thr Tyr Gln Arg Thr Arg Gln Leu Val Arg Leu Thr Gly Met Asp Pro

1

5

10

15

<210> 4  
 <211> 95  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer for construction of plasmid pV-wt  
  
 <400> 4  
 gaagcttaaat acgactcact ataagtagaa acaagggtgt tttttcatat catttaaact 60  
 tcaccctgct ttgctgaat tcattcttct gcagg 95  
  
 <210> 5  
 <211> 95  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer for construction of plasmid pM-wt  
  
 <400> 5  
 gaagcttaaat acgactcact ataagcaaaa gcagggtgaa gtttaaatga tatgaaaaaa 60  
 cacccttggt tctactgaat tcattcttct gcagg 95  
  
 <210> 6  
 <211> 68  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer for construction of plasmid pV-d5'  
  
 <400> 6  
 agcttaatac gactcactat aagatctatt aaacttcacc ctgcttttgc tgaattcatt 60  
 cttctgca 68  
  
 <210> 7  
 <211> 60  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer for construction of plasmid pV-d5'  
  
 <400> 7  
 gaagaatgaa ttcagcaaaa gcagggtgaa gtttaataga tcttatagtg agtcgtatta 60  
  
 <210> 8  
 <211> 42  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer for construction of plasmid pHgaNS  
  
 <400> 8  
 ccgaattctt aatacgactc actataagta gaaacaaggg tg 42

<210> 9  
 <211> 30  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer for construction of plasmid pHgaNS  
  
 <400> 9  
 cctctagacg ctcgagagca aaagcaggtg 30  
  
 <210> 10  
 <211> 15  
 <212> RNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer for construction of plasmid pHgaNS  
  
 <400> 10  
 cacccugcuu uugcu 15  
  
 <210> 11  
 <211> 15  
 <212> RNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer for generating point mutations in promoter sequence  
  
 <400> 11  
 cacccugcuu uuacu 15  
  
 <210> 12  
 <211> 15  
 <212> RNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer for generating point mutations in promoter sequence  
  
 <400> 12  
 cacccugcuu cugcu 15  
  
 <210> 13  
 <211> 15  
 <212> RNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer for generating point mutations in promoter sequence  
  
 <400> 13  
 cacccuguuu cugcu 15  
  
 <210> 14  
 <211> 16  
 <212> RNA  
 <213> Artificial Sequence

<220>  
 <223> Primer for generating point mutations in promoter sequence  
  
 <400> 14  
 cacccuugcu uuugcu 16  
  
 <210> 15  
 <211> 15  
 <212> RNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer for generating point mutations in promoter sequence  
  
 <400> 15  
 caccuguuu uuacu 15  
  
 <210> 16  
 <211> 15  
 <212> RNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer for generating point mutations in promoter sequence  
  
 <400> 16  
 caccuguuu uugcu 15  
  
 <210> 17  
 <211> 16  
 <212> RNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer for generating point mutations in promoter sequence  
  
 <400> 17  
 cacccuugcu uuuacu 16  
  
 <210> 18  
 <211> 16  
 <212> RNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer for generating point mutations in promoter sequence  
  
 <400> 18  
 cacccuuguu uuuacu 16  
  
 <210> 19  
 <211> 16  
 <212> RNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer for generating point mutations in promoter sequence  
  
 <400> 19  
 cacccuuguu ucuacu 16

<210> 20  
 <211> 96  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer  
  
 <400> 20  
 ctagacgccc tgcagcaaaa gcagggtgac aaagacataa tggagaaaaa aatcactggg 60  
 tataaccaccg ttgatatatc ccaatcgcat cgtaaa 96  
  
 <210> 21  
 <211> 96  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer for generating flanking sequences of NS RNA to fuse with the  
 coding sequence of the CAT gene  
  
 <400> 21  
 gttcttttacg atgcgattgg gatatatcaa cgggtggata ccagtgatt tttttctcca 60  
 ttatgtcttt gtcaccctgc ttttgctgca gggcgt 96  
  
 <210> 22  
 <211> 34  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer for generating flanking sequences of NS RNA to fuse with the  
 coding sequence of the CAT gene  
  
 <400> 22  
 actgcgatga gtggcagggc ggggcgtaat agat 34  
  
 <210> 23  
 <211> 38  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer for construction of plasmid pIVACAT1  
  
 <400> 23  
 ctagatctat tacgccccgc cctgccactc atcgcagt 38  
  
 <210> 24  
 <211> 34  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer  
  
 <400> 24  
 actgcgatga gtggcagggc ggggcgtaat agat 34

<210> 25  
 <211> 38  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer for generating flanking sequences of NS RNA to fuse with the coding sequence of the CAT gene  
  
 <400> 25  
 ctagatctat tacgccccgc cctgccactc atcgcagt 38  
  
 <210> 26  
 <211> 97  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer for construction of plasmid pIVACAT1  
  
 <400> 26  
 ctagacgccc tgcagcaaaa gcagggtgac aaagacataa tggagaaaaa aaatcactgg 60  
 gtataccacc gttgatatat cccaatcgca tcgtaaa 97  
  
 <210> 27  
 <211> 96  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer for construction of plasmid pIVACAT1  
  
 <400> 27  
 gttcttttacg atgcgattgg gatatatcaa cggtgggtata cccagtgatt tttttctcca 60  
 ttatgtcttt gtcaccctgc ttttgctgca gggcgt 96  
  
 <210> 28  
 <211> 30  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer for construction of pT3NAv  
  
 <400> 28  
 cggaattctc ttcgagcgaa agcaggagtt 30  
  
 <210> 29  
 <211> 51  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer for construction of pT3NAv mut 2  
  
 <400> 29  
 catgggtgag tttcgaccaa aatctagatt ataaaatagg atacatatgc a 51  
  
 <210> 30  
 <211> 51

<212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer  
  
 <400> 30  
 catgggtgag ttctgaccaa aatctagatt ataaaatagg atacatatgc a 51  
  
 <210> 31  
 <211> 43  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer for construction of pT3NAv mut 2  
  
 <400> 31  
 aatgtatcct attttataat ctagattttg gtcgaaactc acc 43  
  
 <210> 32  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer for construction of pT3NA/BIP  
  
 <400> 32  
 ggccactagt aggtcgacgc cggc 24  
  
 <210> 33  
 <211> 22  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer for construction of pT3NA/BIP  
  
 <400> 33  
 gcgctggcca tcttgccagc ca 22  
  
 <210> 34  
 <211> 17  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer for construction of pT3NA/BIP-CAT  
  
 <400> 34  
 agaaaaaat cactggg 17  
  
 <210> 35  
 <211> 17  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer for construction of pT3NA/BIP-CAT

<400> 35  
 ttacgccccg ccctgcc 17  
  
 <210> 36  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer for construction of pT3BIP-NA  
  
 <400> 36  
 gcgcatcgat aggtcgacgc cgg 23  
  
 <210> 37  
 <211> 55  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer for construction of pT3BIP-NA  
  
 <400> 37  
 ggccatcgat ccaatgggta ttatcttctg gtttggattc atcttgccag ttggg 55  
  
 <210> 38  
 <211> 91  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer for construction of pT3GP2/BIP-NA (L-primer)  
  
 <400> 38  
 atgactggat ccgctagcat ggccatcatt tatctcattc tcctgttcac agcagtgaga 60  
 ggggaccaga tagaagaatc gcaaaaccag c 91  
  
 <210> 39  
 <211> 39  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer for construction of pT3GP2/BIP-NA (M-primer)  
  
 <400> 39  
 atgacagaat tcgtcgactt atctattcac tacagaaag 39  
  
 <210> 40  
 <211> 53  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer for construction of pT3GP2/BIP-NA  
  
 <400> 40  
 gcgcgaagac gcagcaaaag caggagttta agctagcatg gccatcattt atc 53



<210> 41  
 <211> 38  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer for construction of pT3HGP2/BIP-NA  
  
 <400> 41  
 cgatggatcc gctagcttgg aatcgatggg ggtgtatc 38  
  
 <210> 42  
 <211> 37  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer for construction of pT3HGP2/BIP-NA  
  
 <400> 42  
 atcgatgaat tcgtcgactc agatgcatat tctgcac 37  
  
 <210> 43  
 <211> 51  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer for construction of pT3HGP2/BIP-NA  
  
 <400> 43  
 atgactgtcg acccatggaa gtcaatcgat gttatgttaa accaattcca c 51  
  
 <210> 44  
 <211> 28  
 <212> DNA  
 <213> Influenza A virus  
  
 <400> 44  
 gcgcgaattc tcttcgagca aaagcagg 28  
  
 <210> 45  
 <211> 18  
 <212> DNA  
 <213> Influenza virus  
  
 <220>  
 <223> Position 243-226 of the NA gene  
  
 <400> 45  
 agagatgaat tgccggtt 18  
  
 <210> 46  
 <211> 6  
 <212> PRT  
 <213> Human Immunodeficiency Virus-1 (HIV-1)  
  
 <400> 46  
 Glu Leu Asp Lys Trp Ala  
 1 5

<210> 47  
<211> 12  
<212> RNA  
<213> Artificial Sequence

<220>  
<223> Primer

<400> 47  
ccugcuuuyg cu 12

<210> 48  
<211> 22  
<212> RNA  
<213> Artificial Sequence

<220>  
<223> Primer

<400> 48  
aguagaaaca aggguguuuu uu 22

<210> 49  
<211> 52  
<212> RNA  
<213> Influenza A virus

<400> 49  
aguagaaaca aggguguuuu uucauaucuu uaaacuucac ccugcuuuug cu 52

<210> 50  
<211> 53  
<212> RNA  
<213> Influenza A virus

<400> 50  
agcaaaagca gggugaagu uaaugauau gaaaaaacac ccuuguuuucu acu 53

<210> 51  
<211> 30  
<212> RNA  
<213> Influenza A virus

<400> 51  
agaucuaaua aacuucaccc ugcuuuugcu 30

<210> 52  
<211> 43  
<212> RNA  
<213> Artificial Sequence

<220>  
<223> Primer for generate mutagenesis sequence within viral gene segments

<400> 52  
aguagaaaca aggguguuuu uucagaucua uuacgccccg ccc 43

<210> 53

<211> 15  
 <212> RNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer for construction of WSN NA gene in pT3NAv plasmid  
  
 <400> 53  
 aguagaaaca aggag 15  
  
 <210> 54  
 <211> 14  
 <212> RNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer for construction of WSN NA gene in pT3NAv plasmid  
  
 <400> 54  
 aguagaaaca agag 14  
  
 <210> 55  
 <211> 12  
 <212> RNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer for construction of WSN NA gene in pT3NAv plasmid  
  
 <400> 55  
 ccugcuuucg cu 12  
  
 <210> 56  
 <211> 53  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer  
  
 <400> 56  
 ccatgggtga gtttcgacca aaatctagat tataaaatag gatacatatg cag 53  
  
 <210> 57  
 <211> 15  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer  
  
 <400> 57  
 cctgcagaag aatga 15  
  
 <210> 58  
 <211> 55  
 <212> RNA  
 <213> Artificial Sequence  
  
 <220>

<223> Primer for generate mutagenesis sequence within viral gene segments

<400> 58  
gugguauacc cagugauuuu uuucuccauu augucuuugu caccugcuu uugcu 55

<210> 59  
<211> 53  
<212> RNA  
<213> Artificial Sequence

<220>  
<223> Primer for construction of WSN NA gene in pT3NAv plasmid

<400> 59  
cugcagaugu auccuauuuu auaaucuagg uuuggucga aggacacca ugg 53

<210> 60  
<211> 12  
<212> RNA  
<213> Artificial Sequence

<220>  
<223> Primer for construction of WSN NA gene in pT3NAv plasmid

<400> 60  
ccugcuuucg cu 12

<210> 61  
<211> 53  
<212> RNA  
<213> Artificial Sequence

<220>  
<223> Primer for construction of WSN NA gene in pT3NAv plasmid

<400> 61  
cugcauangu auccuauuuu auaaucuaga uuuggucga aacucacca ugg 53

<210> 62  
<211> 96  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Primer

<400> 62  
ctagacgcc tgcagcaaaa gcagggtgac aaagacataa tggagaaaaa aatcactggg 60  
tataccaccg ttgatatac ccaatcgcat cgtaaa 96

<210> 63  
<211> 42  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Primer for construction of pT3NAv

<400> 63  
ccaagcttat taaccctcac taaaagtaga aacaaggagt tt 42

F3  
conc ✓